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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,646	08/24/2000	Shinichiro Hayashi	13041.5US01	3347
7590 01/16/2007 Mamre, Schumann, Mueller & Larson, P.C. P.O. Box 2902-0902 Minneapolis, MN 55402			EXAMINER VO, HAI	
			ART UNIT	PAPER NUMBER
			1771	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/16/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/645,646

Applicant(s)

HAYASHI ET AL.

Examiner

Hai Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 100-127 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 100-127 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

1. The art rejections over Toyosawa et al (US 5,716,997) taken alone have been withdrawn in view of the present amendment. However, the art rejections over Toyosawa et al in view of von Bonin et al (US 4,992,481) are maintained.
2. The art rejections based on Shimizu et al (US 4,911,974), Giez et al (US 5,366,999), Imashiro et al (US 5,413,853), and von Bonin et al (US 4,992,481) separately are considered moot in view of the claim cancellation.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 100-127 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyosawa et al (US 5,716,997) in view of von Bonin et al (US 4,992,481).

Toyosawa teaches a polymeric reticulated structure comprising a three-dimensional continuous network having strands of the copolymer connected to define internal cells which communicate with each other, and the cells filled with a functional material such as a thermoplastic or thermosetting resin (column 12, lines 33-37 and figure 1). The cells have a circular cross section as shown in figure 1. The open celled structure with the individual cells being defined by a plurality of mutually connected, three dimensionally branched webs indicates a reticulated foam material. The three-dimensional continuous network suggests that the polymeric reticulated

structure is a stereoscopic mesh structural material. The cells have an average diameter from 1 to 50 microns (column 5, line 26). The cells have a wall thickness from 0.5 to 5 microns within the claimed range (column 5, line 25). Toyosawa does not specifically disclose the filling rate of the functional material with respect to an entire volume of the void portion of the three-dimensional continuous network.

However, Toyosawa discloses the weight ratio of copolymer and functional material is up to 30% within the range disclosed in the specification of the present invention (Toyosawa, column 6, lines 30-32 vs. Applicants' specification, page 25). Further, Toyosawa uses the same technique for filling the functional material into the voids of the three-dimensional continuous network as Applicants (column 10, lines 41-47).

Therefore, it is examiner's position that the filling rate of the functional material would be inherently present so as to enable the polymeric reticulated structure obtained which is structurally the same as the eraser as presently claimed. Toyosawa does not specifically disclose the reticulated foam structure made from a thermosetting resin. Van Bonin, however, teaches a sealant material made from reticulated foam which is impregnated with a binder solution (column 4, lines 15-30; column 5, lines 25-40). Van Bonin teaches the reticulated foam formed from rubber foam, polyolefin foam, melamine resin foam or urea resin foam. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute thermosetting resin for the thermoplastic block copolymer of the Toyosawa invention since two materials have been shown in the art to be recognized equivalent foam material for the sealing members.

Toyosawa does not specifically disclose the polymeric reticulated structure comprising a coloring agent. However, Toyosawa teaches the polymeric reticulated structure suitable as a toy, therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a coloring agent in the polymeric reticulated structure motivated by the desire to provide decorative effects.

Toyosawa does not specifically disclose the polymeric reticulated structure comprising a plurality of blocks of porous structural materials and each block formed into the shape of a plate. However, Toyosawa teaches the polymeric reticulated structure suitable as a construction material, therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ plurality of blocks of the polymeric reticulated structure and each block formed into the shape of a plate for higher strength and dimensional stability.

Toyosawa as modified by von Bonin fails to teach "an eraser" or "an electric-eraser". However, it has not given patentable weight because a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. ***Kropa v. Robie***, 88 USPQ 478 (CCPA 1951). Toyosawa as modified by von Bonin does not teach the sealing member exhibiting the skeletal fracture during deformation by compression. However, it appears that the resulting member of Toyosawa as modified by von Bonin meets all the structural limitations and chemistry as required by the claims.

The polymeric reticulated structure comprises a thermosetting skeleton structure impregnated with a resin component. The skeleton structure has a skeleton portion with the wall thickness within the claimed range. The void portion of the skeleton structure has an average pore size within the claimed range. The cell has a circular cross section. The polymeric reticulated structure is a foamed structural material, a stereoscopic mesh structural material. Therefore, it is not seen that the polymeric reticulated structure would have performed differently than the eraser of the present invention in terms of tensile strength, extension percentage, compression repulsive force, surface hardness, sticking strength, coefficient of friction, wear rate and skeletal fracture by compression. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties.

Toyosawa does not specifically disclose the functional material made from a cured material of a composition in a sol state which comprises a vinyl chloride based resin and a plasticizer. Van Bonin, however, teaches a sealant material made from reticulated foam which is impregnated with a binder solution (column 4, lines 15-30; column 5, lines 25-40). Van Bonin teaches that the binder solution is a cured material of a composition in a sol state which comprises a vinyl chloride based resin and a plasticizer (column 6, lines 54-56) because it has a good adhesion, flexibility, weathering stability along with good absorption capacity for fillers and provides the impregnation with freedom from dust (column 6, lines 45-55). Therefore, it would

have been obvious to one having ordinary skill in the art at the time the invention was made to employ comprises a vinyl chloride based resin and a plasticizer as the impregnating material motivated by the desire to provide the sealing member with good flexibility, weathering stability and freedom from dust.

5. The art rejections over Toyosawa in view of von Bonin have been maintained for the following reasons. Applicants argue that Toyosawa does not satisfy the combination of average thickness range and average pore size set forth in the claims. The examiner respectfully disagrees. Toyosawa teaches that the cells have an average diameter from 1 to 50 microns (column 5, line 26) and the cell wall thickness of from 0.5 to 5 microns (column 5, line 25) within the claimed ranges.

Applicants argue that Toyosawa does not teach a filling rate of an elastic material as set out in the claims. The examiner respectfully disagrees. Toyosawa discloses the amount of the copolymer is up to 30% by weight based on the total weight of copolymer and functional material. Likewise, the sealant member contains at least 70% by weight of the functional material. Turning to the present invention, the elastic material is constituted 10 to 80% by weight based on the total weight of the eraser (Applicants' specification, page 25). Further, Toyosawa uses the same technique for filling the functional material into the voids of the three-dimensional continuous network as Applicants (column 10, lines 41-47). Therefore, it is examiner's position that the filling rate of the functional material would be inherently present as the same composition and the same process have been employed. The

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same token is applied to the wear rate, hardness and sticking strength. Accordingly, the art rejections are sustained.

6. Claims 100-127 are rejected under 35 U.S.C. 103(a) as being unpatentable over von Bonin et al (US 4,992,481) in view of Toyosawa et al (US 5,716,997). von Bonin teaches a sealant member comprising a thermosetting reticulated foam impregnated with a plasticized latex of polyvinyl chloride or polyvinyl acetate (column 6, lines 30-32, and 54-56; column 4, lines 25-30). The reticulated structure suggests that the sealant member is a stereoscopic mesh structural material. The sealant member contains red pigments (example 4). Von Bonin teaches the foam having 5 to 500 pores per cm². Likewise, each pore has average diameter of about 2.5 to 25 microns, which is within the claimed range. Von Bonin does not teach a thickness of the cell walls. Toyosawa teaches a sealant member comprising a three-dimensional continuous network having strands of the copolymer connected to define internal cells which communicate with each other, and the cells filled with a functional material such as a thermoplastic or thermosetting resin (column 12, lines 33-37 and figure 1). The cells have a circular cross section as shown in figure 1. The open celled structure with the individual cells being defined by a plurality of mutually connected, three dimensionally branched webs indicate a reticulated foam material. The three-dimensional continuous network suggests that the polymeric reticulated structure is a stereoscopic mesh structural material. The cells have an average diameter from 1 to 50 microns (column 5, line 26). The cells have a wall thickness from 0.5 to 5 microns within the claimed range (column 5, line 25). Therefore, it

would have been obvious to one having ordinary skill in the art at the time the invention was made to use the reticulated foam having cell wall thickness in the range disclosed by Toyosawa motivated by the desire to provide the sealant member having higher heat resistance, chemical resistance and sufficient elasticity.

Although von Bonin fails to teach the sealant member suitable as an eraser, "an eraser" or "an electric-eraser" has not given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

Von Bonin does not specifically disclose the filling rate of the impregnating material with respect to an entire volume of the void portion of the three-dimensional continuous network. However, von Bonin discloses the binder present from 3 to 30% by weight within the range disclosed in the specification of the present invention. Therefore, it is examiner's position that the filling rate of the binder material would be inherently present.

Von Bonin as modified by Toyosawa does not teach the sealant member exhibiting the skeletal fracture during deformation by compression. However, it appears that the modified sealant member meets all the structural limitations and chemistry as required by the claims. The sealant member comprises a skeleton structure impregnated with a vinyl chloride-based resin. The skeleton structure has a skeleton portion and a void portion. The cell wall thickness and pore size are

within the claimed ranges. The sealant member is a stereoscopic mesh structural material. Therefore, it is not seen that the sealant member would have performed differently from the eraser of the present invention in terms of tensile strength, extension percentage, compression repulsive force, surface hardness, sticking strength, coefficient of friction, wear rate and skeletal fracture by compression. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is also in line with *In re Spada*, 15 USPQ 2d 1655 (1990).

Von Bonin does not specifically disclose the reticulated foam comprising a plurality of blocks of porous structural materials and each block formed into the shape of a plate. However, von Bonin teaches the reticulated foam suitable as a wallboard (column 4, line 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ plurality of blocks of the reticulated foam and each block formed into the shape of a plate for higher strength and dimensional stability.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

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period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Friday, from 6:00 to 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hai Vo

HV

HAIVO
PRIMARY EXAMINER